REMARKS

Claims 21-40 are currently pending in the present application. Reexamination and reconsideration of the application are respectfully requested. Applicant graciously acknowledges 1) the withdrawal of rejections based on 35 U.S.C. 102(b), 2) the withdrawal of rejections based on 35 U.S.C. 112, and 3) the withdrawal of the double patenting warning.

REJECTION OF CLAIMS 21-40 UNDER 35 U.S.C. 103(a)

Claims 21-40 are rejected under 35 U.S.C. 103(a) for the reasons set forth on pages 3-6. Specifically, claims 21-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shastri et al. (U.S. Pat. No. 5,844,928 hereinafter the Shastri reference) in view of Heilman et al. (U.S. 2000/0094000, hereinafter the Heilman reference) and Olsen (U.S. Pat. No. 5,623,355 hereinafter the Olsen reference).

The rejections under 35 U.S.C. 103 are respectfully traversed, and reconsideration and reexamination of the application is respectfully requested for the reasons set forth hereinbelow.

The Action cites FIG. 2 (elements 20 and 36), and Columns 2 & 3 for teaching a laser driver having a nonvolatile memory and a digital controller. Regarding claims 21, 28, 29 and 36, the Action recites FIG. 2 of Shastri and elements 20, 36, 43 as disclosing the claimed invention. Regarding claims 22 and 30, the Action recites FIG. 2 of Shastri and element 20 as disclosing the claimed invention. Regarding claims 24 and 31, the Action recites FIGS. 1 and 2 of Shastri and elements 36 and 38 as disclosing the

claimed invention. Regarding claim 25, the Action recites the up/down counter of FIG. 2 as disclosing the claimed invention.

Regarding claims 23, 26, 27, 32, 39 and 40, the Action on page 4 proposes the combination of Shastri's laser system with the negative peak timer from the Heilman reference. Also, the Action on page 5 proposes the combination of Shastri's laser system with components (e.g., D/A converters 50, 60) from the Olsen reference. For example, the Action states that although Shastri et al. is silent to using an array of lasers (page 5, line 3), the Olsen reference teaches a driver for an array of lasers. Specifically, elements 18 and 54 of FIG. 2, col. 3, lines 33-40 & col. 6, lines 8-18 of Olsen are cited for teaching parallel semiconductor laser arrays.

These combinations are contested as improper for the reasons advanced below. However, even if these combinations were proper, which is not conceded, the resulting combinations would still fail to teach or suggest the claimed invention.

Regarding claims 33, 37 and 38, the Action recites FIG. 2 of Shastri as disclosing the claimed invention. Regarding claim 34, the Action recites monitor 16 in FIG. 2 of Shastri as disclosing the claimed invention. Regarding claim 35, the Action recites FIG. 2 of Shastri and laser 14 as disclosing the claimed invention.

<u>Olsen Reference</u>

The Olsen reference describes an "Error-rate-based laser driver control system" that includes a receiving processor 16 and a transmitting processor 18. The system operates as follows: 1) The transmitting processor 18 "produces a serial stream of error

detection encoded binary data 30 which is sent to the laser driver 54;" 2) The laser diode 32 "converts the binary data 30 from electrical energy into light energy 34 which is channeled over an optical medium 36 to the receiver 22;" 3) A photosensitive diode 38 "reconverts the light encoded data 34 from light energy to electrical energy;" and 4) "The reconverted data 40 is then passed to the receiving processor 16." (Col. 2, line 65 to Col. 3, line 5)

The receiving processor 16 then "checks the data for errors and communicates transmission error occurrences to the transmitting processor 18 by sending an error signal 20." (Col. 3, lines 6-8) The transmitting processor 18 then "processes the error signal 20 and compensates for the error." (Col. 3, lines 15-17)

The transmitting processor then performs the following: "After receiving an error signal, the transmitting processor 18 may choose to compensate by adjusting the laser drive current to an appropriate level. Laser drive current is a combination of the laser pulse current 64 and the laser bias current 62. The transmitting processor 18 may also resend the data, which was erroneously transmitted. (Col. 3, lines 20-24)

In summary, Olsen uses a closed-loop system that depends on feedback from the receiver processor 16. Olsen's system appears to be a quite complex and to require at least two processors, transmission error rate calculations, error detection algorithms, and error correction schemes. (Col. 2, lines 3-16)

It is further noted that the transmitting processor 18 does <u>not</u> fairly teach a memory or storage as suggested on page 5, line 4 of the Action. Furthermore, FIG. 2 and related description <u>only</u> describe using two binary words (48, 66) to change two

currents (I_pulse) 64 and (I_bias) 62, and does not teach or suggest the storage or use of AC parameters as claimed. (Col. 3, lines27-33)

Heilman Reference

Heilman Does Not Appear To Be Valid Prior Art

The fourth paragraph on page 2 of the Action states that according to MPEP 706.02(f)(1), Heilman is proper prior art. It is respectfully asserted that Heilman is not proper prior art since the earliest effective filing date of the Heilman reference is Nov. 6, 2001, and the effective filing date of the current application is Dec. 12, 2000.

Heilman's non-provisional application, filed on Nov. 6, 2001, which is almost eleven (11) months after the effective filing date of the current application, is based on three provisional applications (i.e., 06/246,301, 06/246,325 and 06/246,407). However, it is respectfully submitted that the non-provisional application was not filed in a timely manner to benefit from the Nov. 16, 2000 filing date of the provisional applications since more than 12 months elapsed between the filing date of the provisional applications and the filing date of the non-provisional application.

U.S.C. 119(e)(1) states that the benefit or priority extends to the non-provisional application only if the non-provisional application "is filed not later than 12 months after the date on which the provisional application was filed." [emphasis added] In this case, the 12 months ended on Nov. 5, 2001. Thus, the effective date of the Heilman

reference can be no earlier than Nov. 6, 2001, which as noted previously, is many months after the effective filing date of the current application.

Furthermore, assuming arguendo that the Heilman reference is entitled to rely on the Nov. 6, 2000 date, which is contested and not conceded, it is respectfully requested that a showing be made that the portion of the Heilman application relied upon for teaching the claimed invention was originally set forth in the provisional applications. Otherwise, those portions may have been introduced into the Heilman application by amendment as new matter and as such would be accorded the date of amendment as its effective date and not the filing date of the provisional applications. Since the originally filed provisional applications are not accessible to the public, it is respectfully requested that the next Action provide this showing.

Consequently, it is respectfully submitted that the Heilman is not a proper or valid prior reference when applied to the current application. Moreover, even if Heilman were a valid or proper prior art reference, which is not conceded, Heilman, whether alone or in combination with Shastri and Olsen, fails to teach or suggest the invention as claimed as advanced in greater detail hereinafter. Accordingly, it is respectfully requested that the Heilman reference be withdrawn and not used as a basis for rejecting the pending claims.

In summary, Heilman provides a circuit to decrease the turn off time for a VCSEL (paragraph 0034). The Heilman reference fails to teach or suggest the use of digitally programmable parameters for changing the output waveform generated by the laser driver in a controlled manner as claimed. Specifically, the Heilman reference does

not appear to teach or suggest storing waveform parameters and using those parameters to adjust and control the shape of the negative peak portion of a drive waveform. Moreover, Heilman's negative peak timer 5 does not appear to be digitally programmable, but instead appears to operate as an analog circuit (see FIG. 4). Accordingly, providing a circuit for decreasing the turn off time for a VCSEL (Col. 4, lines 1-3) does not fairly teach the invention as claimed.

THE PROPOSED COMBINATION IS BASED ON IMPERMISSIBLE USE OF THE CLAIMED INVENTION AS A TEMPLATE TO PIECE TOGETHER THE TEACHINGS OF THE SHASTRI REFERENCE, THE HEILMAN REFERENCE, AND THE OLSEN REFERENCE

The Action states that the Shastri reference teaches most of the components of the claimed invention. The Action further states that the Shastri reference fails to teach or suggest "negative peaking or the laser system." The Heilman reference is then cited for teaching a "circuit for decreasing the negative peaking due to switching on and off of the laser." The Action proposes the combination of Shastri's laser system with the circuit for decreasing the negative peaking selected from Heilman.

It is respectfully submitted that the Shastri, Heilman, and Olsen references are improperly combined. It appears that the Action uses improper hindsight to selectively pick pieces from the Shastri reference, pieces from the Heilman reference, and pieces from the Olsen reference to arrive at the claimed invention.

It is respectfully submitted that none of the cited references (e.g., the Shastri, Heilman, and Olsen references) explicitly or implicitly teach or suggest any motivation to combine components or their respective systems with selected circuits or

components of the other references. Furthermore, it appears that each system is complete by itself and does not require or even permit additional circuits as suggested by the Action.

Moreover, it is unclear whether the proposed modifications are enabled by the disclosure of the cited references or whether such modifications or combinations are even possible since the design, operation, and function of Olsen's laser drive control system is very different from the design, operation, and function of Shastri's laser driver and the design, operation, and function of Heilman's negative peaking circuit.

Assuming arguendo that pieces of the Heilman system and pieces of the Olsen system can be incorporated into the laser driver design of Shastri, the Federal Circuit has stated, "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1783–84 (Fed. Cir. 1992) [emphasis added].

The Federal Circuit has further held In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992):

> In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. ... "[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art ... would lead that individual to combine the relevant teachings of the references. In re Fine, 837 F.2d 1071, 1074, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1988). [emphasis added.]

The Action on page 4 states as the motivation to combine the teachings of the Shastri reference with selected disclosures from the Heilman reference, "it would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the laser system of Shastri with the circuit described in Heilman because it would decrease the negative peaking caused by the on and off of the modulated current."

Similarly, the Action on page 5 states as the motivation to combine the teachings of the Shastri reference with selected disclosures from the Olsen reference, "it would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide the laser system of Shastri with a plurality of lasers having temperature and aging compensation, as taught by Olsen."

Although these three references are related to controlling lasers as a general matter, it is respectfully submitted that the similarities end there. The Heilman reference is directed to a circuit for solving a specific problem, that is, turning the VCSEL off quickly. The Olsen reference is directed to an error-rate-based system for controlling the drive current for lasers that uses complex feedback and two processors. Shastri is directed to a laser driver that uses a temperature sensor to measure a temperature, which is used as an address to a look-up table of values (e.g., bias current, modulation current, backface diode current set point, and an aging coefficient). A backface diode that measures laser output, a feedback circuit, a comparator, multiplier, and counter are used in conjunction with the temperature dependent backface diode current set point to compensate for the age of the laser.

It is respectfully suggested that this quoted portions from the Action are deficient and would not have motivated one of ordinary skill in the art to combine the pieces of information from the three different references in the manner suggested by the Action.

Furthermore, it appears that the current patent application has been improperly used as a basis for the motivation to combine or modify the components selected from Shastri, Heilman, and Olsen to arrive at the claimed invention. Stated differently, the proposed combination of the cited references appear to be based on hindsight since the cited references do not teach or suggest a motivation to combine the respective elements of each reference in the manner proposed by the Action.

The Federal Circuit has held, "<u>It is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the prior art so that the claimed invention is rendered obvious</u>. This court has previously stated, "[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." (quoting In re Fine, 837 F.2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988)), <u>In re Fritch</u>, 23 USPQ 2d 1780, 1784 (Fed. Cir. 1992). [emphasis added.]

Furthermore, the Federal Circuit has held, "The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a prima facie case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That

knowledge can not come from the applicant's invention itself." In re Oetiker, 977 F.2d 1443, 24 USPQ 2d 1443, 1446 (Fed. Cir. 1992)

Accordingly, hindsight reconstruction may not be used to pick a component from Shastri, another component from Heilman, and yet another component from Olsen to arrive at the invention as claimed. Accordingly, it is respectfully requested that the rejection of claims 21-40 under 35 U.S.C. 103(a) be withdrawn.

In view of the foregoing, it is respectfully submitted that the Shastri reference, whether alone or in combination with the Heilman reference and the Olsen reference, fails to teach or suggest the optical transmitter, laser driver, and method related thereto as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 103(a) be withdrawn.

EVEN IF PROPERLY COMBINED, THE SHASTRI REFERENCE, THE HEILMAN REFERENCE AND THE OLSEN REFERENCE FAIL TO TEACH OR SUGGEST THE SPECIFIC LIMITATIONS SET FORTH BY THE INDEPENDENT AND DEPENDENT CLAIMS

It is respectfully submitted that even if the Shastri, Heilman, and Olsen references were properly combined, which is not conceded, the combination of the references still fails to teach or suggest specific limitation recited by the claims.

Furthermore, the cited references fail to teach or suggest that characteristics of the drive current can be programmed. In contrast, FIG. 7 of the current application indicates exemplary parameters (e.g., I_bias, I_mod, T_pkw, I_pkd) that may be programmed to affect the shape of the drive waveform.

Regarding the method claims, claim 36 recites, "adjusting the first set of drive waveform parameters during the operation of the laser driver based on one of a temperature factor and an aging factor," which does not appear to be disclosed by any of the cited references.

For example, Shastri uses only a temperature as an address to the EEPROM 20. The temperature is converted into a digital form and then utilized to access a look-up table 20 (see FIG. 1 and FIG. 2, and col. 3, lines 13-18). It is noted that the data (e.g., bias current 48, modulation current 50, and set point 46) retrieved from the look-up table 20 is <u>not</u> addressable by an "aging factor" as claimed.

The Shastri system uses a backface diode 16 to provide a signal that represents the optical power output from the laser 14 (col. 2, lines 49-61). The signal is then processed as follows:

> The current signal generated by backface diode 16 is digitized by analog-to-digital converter 54 for comparison in comparator 56 to the digital representation of the backface diode current set point 46 retrieved from look-up table 20. <u>If the digital representation of the current signal is greater than the backface diode set point 46, a feedback loop operates in that up-down counter 58 counts down</u>. This correction is used to multiply, in multipliers 62 and 64, the <u>bias current 48 and modulation current 50 retrieved from look-up table 20</u>. This reduces the drive current to laser 14, interalia, reducing the portion of light 32 emitted from rear facet 30. This feedback loop eliminates the difference between set point 46 and the digital representation of the backface diode output. The counter output, when multiplied with the digital representation of the bias current, results in a modified bias current 48' that is provided to driver 43, which in turn

> generates the drive current to drive laser 14. If the digital representation of the current signal from backface diode 16 is less than the backface diode set point 46, the feedback loop operates in that up-down counter 58 counts up, as limited by maximum aging coefficient 52 in upper limit 68, increasing its output to driver 43, which increases the drive current to laser 14 and in turn increases the portion of light 32 emitted from rear facet 30. Again, operation of the feedback loop eliminates the difference between set point 46 and the digital representation of the backface diode output. (col. 3, lines 37-63) [emphasis added.]

It is clear from this description that a closed feedback loop is employed by Shastri to eliminate the difference between a stored set point 46 and the output of the backface diode 16 by either increasing the drive current to the laser 14 or decreasing the drive current to the laser 14. The drive current to the laser is increased or decreased by incrementing or decrementing the counter 58, which in turn increases or decreases the multiplier 62 and 64 used to modify the bias current 48 and modulation current 50.

In sharp contrast, the claimed invention does not use this complex closed feedback loop system, but instead stores both dc and ac parameters for different aging points, different temperatures, and different lasers. The optical transmitter, driver circuit, and method according to the invention, can retrieve appropriate parameters based on an aging factor (e.g., by using an aging point as an address) without having to use Shastri's complex feedback loop that includes a backface diode, comparator, counter, upper limit block, etc., which can only increase costs, consume more power, and occupy more area.

It is noted that the dependent claims 37-40 incorporate all the limitations of independent method claim 36. The dependent claims add additional limitations, thereby making the dependent claims a fortiori and independently patentable over the cited references.

For example, whereas Shastri's EEPROM is organized to be addressed only by temperature, the claimed invention, uses either a temperature, an aging point, laser identifier, or a combination of the above to specify a set of drive waveform parameters. Specifically, "the drive waveform parameters in the storage are organized by laser, temperature factor, and age factor," as claimed in claims 37 and 38, for example.

In contrast in the Shastri system, 1) the only parameters directly affecting the drive waveform that are retrieved from the look-up table 20 are the bias current and modulation current; and 2) these parameters are addressed only by temperature and not by aging factor or by laser as claimed.

Moreover, dependent claim 39 recites, prior to laser operation, the "digital programming of a negative peaking depth parameter during an optical one to optical zero transition," and the "digital programming of a negative peaking duration parameter during an optical one to optical zero transition," which does not appear to be disclosed by the cited references. Heilman appears to be an analog circuit (FIG. 4, paragraphs 0027 to 0029) that causes an undershoot 401 of the eye diagram (FIG. 7, paragraph 0033) that in turn causes the semiconductor laser to turn off more quickly than without the circuit. It is respectfully submitted that the negative peak timer 5 does not fairly

teach or suggest the digital programming of a negative peaking duration parameter and the digital programming of a negative peaking depth parameter.

For example, there is no indication in Heilman that the turn off time for a VCSEL is programmable or adjustable. Heilman only describes the negative peaking timer as decreasing the turn-off time. (paragraph 0034) Furthermore, Heilman fails to suggest or disclose a negative peaking depth parameter or a negative peaking duration parameter that can be digitally programmed to adjust the negative peaking portion of the drive waveform. It is respectfully noted that "inherent" negative peaking that may occur when switching the laser off (Action, page 2, third paragraph) does not fairly teach or suggest the digital programming of a negative peaking duration parameter and a negative peaking depth parameter to control the shape of the negative peaking portion of the drive waveform as claimed.

Furthermore, dependent claim 40 recites, during operation of the laser driver, the "digital programming of an updated negative peaking depth parameter during an optical one to optical zero transition," and the "digital programming of an updated negative peaking duration parameter during an optical one to optical zero transition." These limitations do not appear to be taught or suggested by the cited references. For example, none of the references even mentions the use of digitally programming ac parameters, such as negative peaking depth and negative peaking duration of the drive waveform, as claimed.

Regarding claim 21, Shastri, whether alone or in combination with Heilman and Olsen, fails to teach or suggest, "wherein the drive waveform parameters includes at

least one parameter for affecting the negative peak portion of the drive waveform," as claimed. As acknowledged by the Action, the Shastri system does not teach or suggest a parameter for affecting the negative peak portion of the drive waveform. The Heilman reference is cited for teaching this limitation. However, it is respectfully submitted that the Heilman reference merely teaches a negative peak timer for quickly turning off the VCSEL, but does not fairly teach "at least one parameter for affecting the negative peak portion of the drive waveform," as claimed.

It is noted that the dependent claims 22-28 incorporate all the limitations of independent claim 21. In this regard, the dependent claims add additional limitations, thereby making the dependent claims a fortiori and independently patentable over the cited references.

Furthermore, Shastri, whether alone or in combination with Heilman and Olsen, fails to teach or suggest a "memory [that] stores the dc properties and the ac properties for each semiconductor laser in the array for different age factors and temperature factors; and wherein the driver circuit generates a drive waveform for each semiconductor laser based on the dc properties and ac properties for that semiconductor laser," as claimed in claim 23. The Olsen reference teaches away from storing any dc or ac properties. The Heilman reference does not mention any dc or ac properties. Shastri only stores some limited data values for a single laser and only for different temperatures. The cited references, whether alone or in combination, do not teach or suggest the storage of separate data values for different aging points, different temperatures, and different lasers, as provided by the claimed invention.

For example, Shastri, whether alone or in combination with Heilman and Olsen fails to teach or suggest "wherein the driver circuit generates an individual drive waveform for each semiconductor laser based on the set of drive waveform parameters associated with that semiconductor laser for increasing the uniformity in the resulting optical waveforms of the semiconductor lasers," as claimed in claim 22. The Olsen reference is cited for teaching the use of a laser driver for an array of lasers. However, it is respectfully noted that Olsen's error-rate-based laser drive control system with complex closed-loop feedback (e.g., between a receiving processor 16 and transmitting processor 18) is very different from and teaches away from the novel driver circuit as claimed. Consequently, the application of Olsen's error-rate-based laser drive control system to laser arrays does not fairly teach the use of the driver circuit according to the invention for an array of lasers.

Regarding claim 25, the Action cites the counter of Shastri as teaching the "integrated digital controller having a timer function for periodically adjusting at least one drive waveform parameter to compensate for aging of the semiconductor laser," as claimed. It is respectfully submitted that the counter of Shastri does not fairly teach the timer function of the claimed invention. Whereas Shastri uses the counter to increase or decrease a multiplier that is applied to the drive current based on feedback from diode 16, the claimed invention utilizes the timer function to track the age of the driver. The age is then utilized by the claimed invention as an address to retrieve drive waveform parameters. Since Shastri does not use age as an address, but only temperature, it follows that Shastri does not track age, but instead stores an approximate

indicator of age (i.e., diode current 46) as a function of temperature. As can be appreciated, the counter of Shastri and the timer function of the claimed invention are very different and utilized to accomplish two entirely different functions.

Also, Shastri, whether alone or in combination with Heilman and Olsen, fails to teach or suggest "wherein the memory includes a nonvolatile memory for storing one of bias current parameter, modulation current parameter, negative peaking depth parameter, and negative peaking duration parameter for each semiconductor laser in the array," as claimed in claim 28. Shastri stores only the bias current 48, the modulation current 50, a set point 46, and maximum allowed aging coefficient 52 (col. 3, lines 33-37) based on temperature. As described previously, the set point 46 and maximum allowed aging coefficient 52 are <u>not</u> the same and do <u>not</u> fairly teach the parameters that adjust the width and duration of the negative peaking portion of the drive waveform as claimed.

For example, the maximum allowed aging coefficient 52 is defined as "a ratio of the actual laser threshold current, at a given temperature, to the beginning of life threshold current at the same temperature." (col. 3, lines 21-24) As defined, the maximum allowed aging coefficient 52 is <u>not</u> related in any way to the parameters stored and utilized by the claimed invention to adjust the width and duration of the negative peaking portion of the drive waveform. Similarly, the set point 46 represents an expected backface diode current for a particular temperature, which is subsequently compared to a currently measured backface diode current, and is <u>not</u> related in any way

to the parameters stored and utilized by the claimed invention to adjust the width and duration of the negative peaking portion of the drive waveform

Another important difference between the Shastri system and the claimed invention is that Shastri stores an indicator of age (e.g., set point 46) in its table that is accessible only by a temperature (i.e., a temperature address), while the claimed invention can utilize age as an address to retrieve drive waveform parameters.

Furthermore, Heilman does not teach the storage of any parameters. Olsen also appears to teach away from storage of parameters and instead adjusts the drive current based on real time transmission errors (col. 4, line 65 to col. 5, line 34, FIG. 5). None of the cited references fairly teach or suggest these parameters and the use of these parameters to shape and modify portions of the drive waveform.

Regarding claim 29, Shastri, whether alone or in combination with Heilman and Olsen, fails to teach or suggest, "a digital controller coupled to the storage for initially accessing a first set of drive waveform parameters that correspond to a first semiconductor laser and subsequently accessing the memory for other sets of drive waveform parameters corresponding to the first semiconductor laser based on one of an age factor and a temperature factor," as claimed. As described earlier, the Shastri system only stores data based on temperature. In contrast, the laser driver according to the invention includes a storage that stores parameters (e.g., dc and ac parameters) for different temperatures, different aging points, and for each different laser.

Moreover, Shastri, whether alone or in combination with Heilman and Olsen, fails to teach or suggest, "wherein the waveform includes a negative peaking portion;

and wherein the drive waveform parameters includes at least one parameter for affecting the negative peaking portion of the drive waveform," as claimed. As described earlier, none of the cited references fairly teach or suggest specific parameters that affect the negative peaking portion of a drive waveform.

It is noted that the dependent claims 30-35 incorporate all the limitations of independent claim 29. In this regard, the dependent claims add additional limitations, thereby making the dependent claims a fortiori and independently patentable over the cited references. For example, Shastri, whether alone or in combination with Heilman and Olsen, fails to teach or suggest "an aging compensation mechanism for monitoring the age of the laser and for providing an age factor for use in selecting a set of drive waveform parameters from the storage to be utilized in generating a drive waveform that compensates for the aging of the laser," as claimed. It is respectfully noted that Shastri does <u>not</u> store data based on aging points, and Shastri's feedback system for adjusting the stored data for aging does <u>not</u> fairly teach the aging compensation mechanism as claimed.

After a review of the cited references, there does not appear to be any teaching of the specific claims limitations recited by the dependent claims. In this regard, it is respectfully requested that the next Action specifically point out those portions of the cited reference that teach or suggest the specific recited elements in the claimed invention.

In view of the foregoing, it is respectfully submitted that the Shastri reference, whether alone or in combination with the Heilman reference and the Olsen reference,

fails to teach or suggest the optical transmitter, laser driver, and method related thereto as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. Section 103(a) be withdrawn.

Conclusion

For all the reasons advanced above, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the pending claims are requested, and allowance is earnestly solicited at an early date. The Examiner is invited to telephone the undersigned if the Examiner has any suggestions, thoughts or comments, which might expedite the prosecution of this case.

Respectfully submitted,

Eric Ho

Eric Ho, Reg. No. 39,711
Attorney for Applicant
20601 Bergamo Way
Northridge, CA 91326
Tel: (818) 998-7220
Fax: (818) 998-7242

Dated: January 20, 2004
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450 on the date below.

Eric Ho
Eric Ho (RN 39,711)

January 20, 2004
(Date)